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09/460,951	12/14/1999	CARLINO PANZERA	JEN-0005-Z	3152
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CANTOR COLBURN, LLP 55 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002			EXAMINER HOFFMANN, JOHN M	
			ART UNIT 1731	PAPER NUMBER

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 09/460,951  
Filing Date: December 14, 1999  
Appellant(s): PANZERA ET AL.

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Andrew Ryan  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 08 September appealing from the Office  
action mailed 19 July 2004.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal – except for those indicated by Appellant in the Brief.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

However the rejection of claim 5 is now dropped. Thus, claim 5 is now objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim.

**(4) Status of Amendments After Final**

No amendment after final has been filed.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is deficient. 37 CFR 41.37(c)(1)(v) requires the summary of claimed subject matter to include: (1) a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, referring to the specification by page and line number, and to the drawing, if any, by reference characters and (2) for each independent claim involved in the appeal and for each dependent claim argued separately, every

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means plus function and step plus function as permitted by 35 U.S.C. 112, sixth paragraph, must be identified and the structure, material, or acts described in the specification as corresponding to each claimed function must be set forth with reference to the specification by page and line number, and to the drawing, if any, by reference characters. The brief is deficient because it indicates that the invention is directed to a composition.

Claim 1 is a method of making an article – not a composition. Thus, the summary fails to disclose the steps of providing and fusing. The summary also fails to mention the framework.

As a clarifying matter: Examiner previously took the position that the claims were worded in a manner which did not necessarily exclude crystallites larger than 10 microns. In light of applicant's statements of 17 September 2004 (page 2, 3<sup>rd</sup> to last line) Examiner now interprets the claims as not permitting any crystal(lites) over 10 microns.

#### **(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct. However, the rejection with Frank as the primary reference is no longer maintained. Also, the rejection of claim 5 is no longer maintained.

#### **(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

#### **(8) Evidence Relied Upon**

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SHAREEF et al., Chemical Abstracts 120 "The effects of microstructural features on the biaxial flexural strength of leucite reinforced glass-ceramics." (1994)

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-4 and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over DE 1441336 in view of Shareef et al.

**Claim 1. A method of fabricating a dental restoration comprising:**

See Title of DE 1441336

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**providing a framework possessing a coefficient of thermal expansion of as high as about  $18 \times 10^{-6}/^{\circ}\text{C}$ ;**

DE 1441336 teaches the “providing a framework” step at page 1, paragraph 3 (as well as other places throughout). The phrase “as high as” is deemed to be the same as “no higher than”. All of the DE 1441336 range has coefficients of thermal expansion that meet this.

**and fusing a dental porcelain composition comprising a leucite crystallite phase dispersed in a feldspathic glass matrix to said framework to provide a smooth, non-abrasive surface thereon;**

The fusing step is disclosed at the sentence spanning pages 2-3 of DE 1441336. Although DE 1441336 does not mention what phases are present, it is noted that DE 1441336 does the same thing as applicant does to get essentially the same result – and thus it is presumed that the DE 1441336 gets the same phases. For example the 6<sup>th</sup> example (page 11 of DE 1441336) uses two component mixing to get the claimed composition with the same thermal expansion. See also DE 1441336 page 2, lines 28-34: component (b) corresponds to Appellant’s second porcelain component (spec. page 8, lines 12-1, and component (a) is feldspathic since it was made from feldspar.

**said fused dental porcelain composition having a maturing temperature in the range from about 750 to about 1050 C., a coefficient of thermal expansion of from about  $12 \times 10^{-6}/^{\circ}\text{C}$  to about  $17.5 \times 10^{-6}/^{\circ}\text{C}$  and comprising (wt. %)**

**SiO<sub>2</sub> 57-66  
Al<sub>2</sub>O<sub>3</sub> 7-15  
K<sub>2</sub>O 7-15**

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Na<sub>2</sub>O 7-12  
Li<sub>2</sub>O 0.5-3

The sixth example (page 11 of DE 1441336) shows all these limitations.

Although Na<sub>2</sub>O is indicated 6.636% and might appear to be outside the claimed range of 7-12%, it actually is not. It is well understood that "6.636" written to one significant digit is "7". Since Appellant has not written the numbers as 7.0-12.0 or 7.000-12.000, one of ordinary skill would realize that the claims encompass values such as 6.999, 6.5 and 6.636.

**and further comprising a dispersed leucite crystallite phase representing from about 5 to about 65 weight percent of the dental porcelain, and wherein the leucite crystallites possess diameters not exceeding about 10 microns.**

As indicated above, since Appellant and DE 1441336 perform the same process, one would expect the same results – including the amount of the crystalline phase, and even the existence of the leucite phase. However, DE 1441336 does not teach the 10 micron size upper limit: DE 1441336 teaches 74 microns: see Example 6 (page 11) which (in the second paragraph) refers to the first example which (page 5) uses components 1 and 2 which were crushed to be no larger than 74 microns (see page 4, lines 26-27 and page 5, lines 1-2) .

SHAREEF et al teaches to using smaller size starting powders for making leucite – containing dental products, result in less microcracking and "significantly higher biaxial flexural strength". The numbers cited increase a doubling in strength – from around 60 MPa to around 120 MPa. One would have been motivated to use as fine of sized particles as would maximize the strength of the final product. Clearly, if the DE

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1441336 particles were to pass through a sieve of 0.010 mm, there would be no particle that is greater than 10 microns. (10 micron = 0.010 mm).

Claims 2-3: as indicated above, it would have been obvious to make the starting materials as finely divided as reasonably possible so as to maximize the advantage that SHAREEF teaches.

Claim 4: DE 1441336's material has a melting point of 900 C. Since fusing is the same thing as melting, it is clear that one can fuse/melt/mature it at 900C. If it can be matured at 900 C then such qualifies as at least one maturing temperature.

Claim 6 is deemed to be met because DE 1441336 does what applicant does: one would expect the same results.

Claim 7 is met. DE 1441336's example 6 has each of the four ingredients in the range – with F = O and CeO<sub>2</sub> = O

### **(10) Response to Argument**

All arguments directed to Frank are moot because Frank is no longer applied.

It is argued that DE 1441336 does not teach using leucite crystals less than 10 microns. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir.



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1986). It does not matter that DE 1441336 does not teach the size because Shareef teaches to have all particles being very small – which necessarily would require having the crystallites being very small.

It is also argued that DE 1441336 does not provide any teaching of how to eliminate all crystals larger than 10 microns. As pointed out above, DE 1441336 teaches how to eliminate all particles larger than 74 microns, this is deemed sufficient to show that one can eliminate all particles of any chosen size. Moreover, Appellant admits on the last 4 lines of page 9 of the specification as to what one skilled in the art understands: that one can separate particles by such things as any of “jet milling, air classification, floatation, etc.” However, Appellant argues that Examiner has misinterpreted the passage; the passage is such that one reading the passage “will now” understand certain variations. And that previously, “no such methods were disclosed in the prior art” (Brief page 12, lines 2-3). Examiner is unconvinced. If Appellant actually just invented jet-milling, air classification and floatation – it is presumed that applicant would disclose what these methods are. Still further the term “etc.” clearly indicates that one would know what else belongs to this group. It does not appear reasonable to conclude that the methods covered by “etc.” were never disclosed in the prior art – because there is no indication as to what methods “etc.” actually covers.

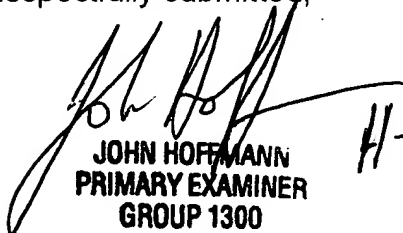
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**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

  
JOHN HOFFMANN  
PRIMARY EXAMINER  
GROUP 1300  
H-23-05

Conferees:

Steve Griffin 

Patrick Ryan 